

# A NEW MITRID FROM THE WESTERN ATLANTIC

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**ABSTRACT.**—*Mitra helenae* n. sp. from Cay Sal Bank, between the Florida Keys and Cuba, is assigned to the subgenus *Pleioptygma* Conrad, 1863, which was previously known to contain only species of Miocene and Pliocene age. The large size of this gastropod, its distinctive clouded color pattern and its threaded sculpture are unique among Recent western Atlantic mitrids. Although assigned to the Mitridae, the true familial affinities of *Pleioptygma* and this new species must await study of the radular dentition.

Malacology has long benefitted from the cooperation of commercial fishermen whose constant searching of the ocean for the objects of their commerce has led them to discover many new forms of marine life.

Recently, through the kindness of Mr. Ivan Thompson of El Cajon, California, we examined two specimens of a remarkable and apparently undescribed mitrid. Mr. Thompson received these gastropods from Captain Jack Casey of Marathon, Florida, who reported collecting them in lobster pots set at a depth of 21.5 m on Cay Sal Bank, between the Florida Keys and Cuba, in December, 1971. Both shells were inhabited by hermit crabs whose well-known carnivorous and scavenging feeding habits almost certainly account for their presence in the pots.

Family Mitridae Swainson, 1831

Genus *Mitra* Lamarck, 1798

Subgenus *Pleioptygma* Conrad, 1863

*Type species.*—*Voluta carolinensis* Conrad, 1840, by monotypy; Miocene; North Carolina.

*Definition.*—Shell large, up to 125 mm in length, fusiform, elongate, inflated, and moderately light in weight; protoconch of 2 or 2½ smooth whorls, telococonch of 6 to 8 slightly convex whorls. Sculpture consisting of moderate to very sharp spiral threads or cords, spaced irregularly and becoming obsolete medially on the whorl. Aperture elongate, slightly longer than spire, smooth within, lip edge thin, with or without a slight swelling anteriorly just below the shoulder slope on the inner surface of the lip; columella with 6-9 irregular, moderately thin, simple folds. Siphonal notch weak to moderately strong; a thin columellar callus extends along the entire inner margin. (Modified after Cernohorsky, 1970:60).

*Remarks.*—Cernohorsky (1970) indicated that *Pleioptygma* probably belongs in the Volutidae. He based his opinion on "large size, inflated and light shell, large columellar callus, absence of a siphonal notch and thin, irregular, often intercalate columellar folds."

We disagree with this placement for several reasons, but primarily as a result of our examination of two Recent specimens of a species referable to *Pleioptygma*. It seems to us that the extremely diverse nature of mitrid and volutid shell form greatly weakens Cernohorsky's arguments. Although volutids average larger than mitrids, the existence of such species as *Mitra swainsoni*, *M. belcheri* and *M. mitra*, all of which reach 120-150mm, clearly shows the potential for large size in this family. Cernohorsky's other arguments are equally difficult to accept as criteria for excluding *Pleioptygma* from the Mitridae. A siphonal notch is apparent on our specimens of the type species and on our new species. Irregularities in the plication and extent of callus development are certainly no greater here than in *Dibaphus* Philippi, 1847, an unquestioned mitrid with no plaits or callus.

Our contention for a mitrid assignment is based on the general form of the shell and, in particular, on the unusual clouded color pattern and the threaded sculpture. Also, the protoconchs of both fossil and Recent species (Figs. 7, 8) are different from any known type of volutid protoconch (see Pilsbry and Olsson, 1954). We are thus tentatively placing the subgenus *Pleioptygma* in the Mitridae, pending examination of the radular dentition of *M. (P.)*

*helenae*.

As Cernohorsky noted, no Recent representatives have been found.

**Mitra (Pleioptygma) helenae** n. sp.

*Type locality*.—Cay Sal Bank (between the Florida Keys and Cuba), ca. 23°45'N., 80°20'W., 21.5 m. Captain Jack Casey coll., December, 1971 (holotype: Figs. 2, 5).

*Type depository*.—Holotype, San Diego Soc. Nat. Hist., Mar. Invert. no. 61863; paratype, collection of Ivan Thompson.

*Diagnosis*.—*Mitra helenae* is comparable to two fossil species from the southeastern United States. It is similar in size and shape to *M. carolinensis* (Conrad, 1840), a species that is probably identical to *M. heilprini* Cossmann, 1899 (= *M. lineolata* Heilprin, 1887, not Bellardi, 1885). It differs from *M. carolinensis* in its more poorly marked columellar callus, its less sharp-crested more closely spaced spiral threads, its broader more inflated penultimate nuclear whorl, its more strongly impressed suture, its more apparent siphonal fasciole, its slopingly shouldered body whorl and its possession of small intermediate plaits between the anterior columellar plaits.

The other fossil species, *M. prodroma* Gardner, is probably the ancestor of *M. heilprini* (see Gardner, 1937:406). It is generally much smaller than *M. helenae* (avg. length 69mm. vs. 112mm.), has fewer (3-5) columellar plaits, which are of regularly increasing prominence, and has a proportionately smaller body whorl that makes up about three-fifths of the total shell length compared to two-thirds or more of the total shell length in *M. helenae*.

Chronologically, *M. prodroma* was the first to appear, followed by *M. carolinensis* and then by *M. helenae*. Morphologically, as well as chronologically, *M. carolinensis* apparently is closer to *M. helenae*.

No other western Atlantic mitrid has been reported to reach the size of *M. helenae*. Another Floridian member of the family, *M. (Dibaphimitra) florida* Gould, 1856, reaches a relatively large size (38-50mm) but has a more convex whorl profile, a shorter spire, a more ventricose body whorl and a white shell with spiral rows of brown dots and some nebulous brown blotches.

Species to which *M. helenae* could be compared in its color pattern and sculpture include *M. versicolor* Reeve, 1844, *M. nebulosa* Reeve, 1844, *M. lamarcki* Reeve, 1844 and *M. serpentina* Lamarck, 1822. None of these reach the size of *M. helenae*, none have its almost volute-like form and all are apparently limited to the Indo-west Pacific.

*Description*.—The shell is large for the genus (98-123mm in length). It is moderately heavy, fusiform, and has a moderately high spire (about 2/5 of total shell length). The shell surface is smooth and polished. The spire whorls are demarcated by an impressed suture. The spire consists of 2¼ smooth, polished, tightly wound nuclear whorls and 7 or 8 weakly convex postnuclear whorls.

The body whorl is large (about 3/5 of total shell length) and fusoid; it is weakly shouldered a short distance anterior to the suture and tapers gradually toward the anterior end. The aperture is long, moderately narrow, and almost rectangular, except at its posterior end. The outer apertural lip is thin and even in a mature specimen. Just below the shoulder margin, on the inner surface of the outer apertural lip, there is a slight swelling extending anteriorly for about 25 mm. The inner lip is oblique and is coated with a thin callus of minor extent. The inner lip bears a series of 9 plaits of various strengths. The two posterior-most are strongest and of these the first is stronger and thicker than the second. These are followed anteriorly by 1 weak and 6 moderately weak plaits that diminish in strength and extent of projection from the aperture proceeding anteriorly. The siphonal fasciole is well-defined, originating as a white raised ridge at the fifth plait from the upper end of the series. The siphonal notch is well-defined and moderately deep.

Axial sculpture is lacking except for fine growth lines, and erratically occurring stronger lines representing major growth stoppages. Spiral sculpture on the spire whorls consists of numerous fine erratically spaced cords; 2 or 3 immediately below the suture are bunched more closely than the others. The stronger primary cords are sharply raised and bear an interrupted brown and white spotted color pattern that is distinct from the background. Weaker secondary cords are ephemeral and, as such, are not visible uniformly over

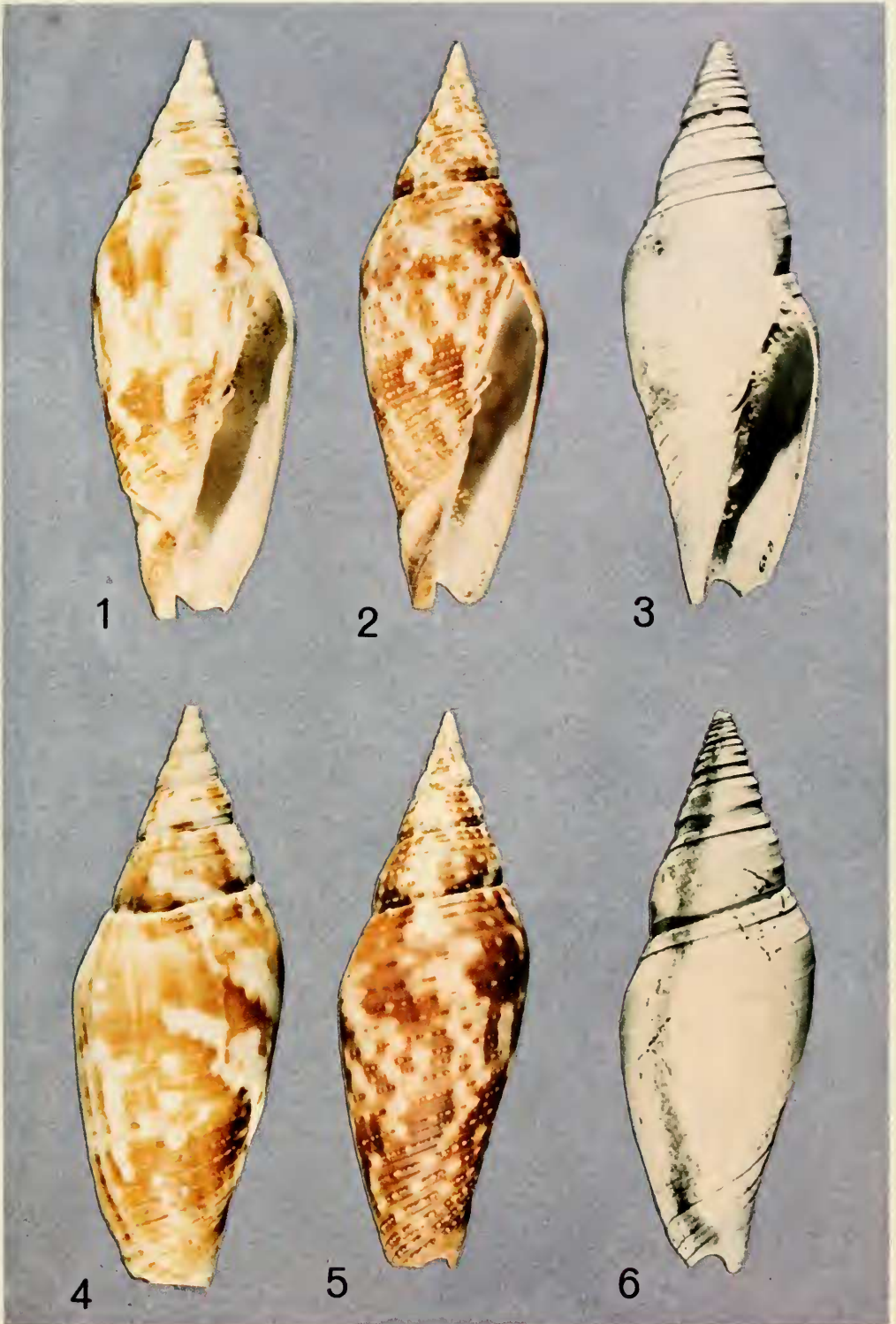


Figure 1. 4. *Mitra (Pleioptygma) helenae* n. sp., paratype, Cay Sal Bank, 21.5 m, in lobster pots, length—123 mm, maximum diameter—41.1 mm, collection of Ivan Thompson. 2, 5. *M. (P.) helenae* n.sp., holotype, Cay Sal Bank, 21.5 m, in lobster pots, length—98.4 mm, maximum diameter—32.1 mm, SDSNH Mar. Invert. no. 61863. 3, 6. *M. (P.) carolinensis* (Conrad, 1840), Pliocene, Clewiston, Florida, length—103 mm, maximum diameter—34.8 mm, SDSNH Paleo. no. 07248.

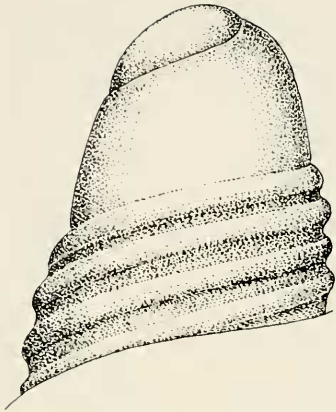


Figure 7. *Mitra (P.) carolinensis* (Conrad, 1840), protoconch, locality data as in Figure 3.

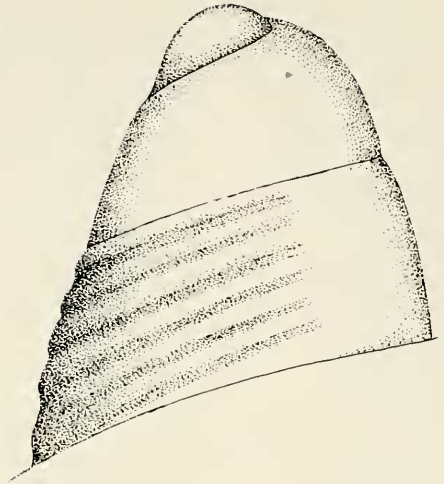


Figure 8. *Mitra (P.) helenae* n.sp., protoconch, locality data as in Figure 2.

the shell. This spiral sculpture becomes partially obsolete on the periphery of the body whorl.

The shell is white with numerous irregular diffuse flammules of reddish chestnut brown. The interior of the aperture is porcellaneous white.

*Measurements.*—Holotype—length, 98.4mm; greatest diameter, 32.1mm; paratype—length, 123mm (lacking protoconch); greatest diameter, 41.1mm.

*Remarks.*—The holotype and the single paratype were inhabited by hermit crabs at the time they were collected. The holotype is in fresh condition and apparently is not full-grown; it has a thin, immature, outer apertural lip. The paratype has apparently attained full size but it lacks a protoconch; its surface is more worn and the color pattern is comparatively faded.

*Mitra helenae* is here considered a living representative of *Pleioptygma*, a genus that is known otherwise only from Miocene and Pliocene species. Other species previously assigned to this group include *M. carolinensis*, *M. heilprini* and *M. prodroma*.

*Etymology.*—This patronym honors the late Mrs. Helen Thompson of El Cajon, California.

#### ACKNOWLEDGMENTS

We thank Captain Jack Casey and Mr. Ivan Thompson for their interest and courtesy in providing us with the only known specimens of *M. helenae*. Mr. David K. Mulliner photographed the specimens and Mr. Clifton Martin supplied references. Mr. Anthony D'Attilio illustrated the protoconchs.

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